CR-AVE Flight Summary
21 January 2006
All times given in CST

General Information

Flight date – 21 January 2006
Flight description – Flight 3 CR-AVE Remote Payload Data Flight (6th flight)
Flight duration - 4.5 hours
Crew – Richard Hull, John Bain
Instruments flown (20): 2DS, ACAM, ALIAS, CAFS, CAPS, CO_2, CPI, CPL, CRS, CSI, Frostpoint, ICOS, JLH, MMS, Ozone, PALMS, PANTHER, PT, Scanning-HIS, WAS

Flight Log

Engine Start	10:36 am	**Takeoff**	10:48 am	**Approach**	2:53 pm
Data Rec On	11:07 am	**Begin Descent**	2:38 pm	**Landing**	3:13 pm

Gear extensions/retractions

Gear Up	10:48 am	3:04 pm				
Gear Down	2:55 pm	3:09 pm				

Weather Observations

Climb-Out:
- The sky was very clear on climb-out, with many cumulus clouds in the distance.
- 11:04 am – Two photos were taken of an interesting thunderstorm cloud in the distance on the left of the aircraft.

Cruise:
- 11:17 am – A high layer became visible in the distance; however, this layer was not very high, and it appeared to be discontinuous. Photos were taken at 11:18 am, 11:28 am, and 11:41 am as we got closer to the layer.
- 11:48 am – During the first high cruise, the sky was clear down to a very solid layer close to the ground.
- 11:58 am – During the descent to 40 kft, the sky was clear down to the cumulus clouds near the surface.
- 12:13 pm – Two photos were taken at 40 kft of an interesting cumulus cloud near us that almost reached our altitude.
- 12:20 pm – Climbing back up at about 48 kft, a promising high layer was seen ahead. Six photos were taken. At 12:26 pm (53 kft), seven more photos were taken, as the layer was more distinct.
- 12:58 pm – During the return flight leg, a very distinct high layer was seen, and four photos were taken (57 kft). Cumulus clouds were near the surface.
- 1:15 pm – We were further north, and the high layer photographed at 12:58 pm ended.
- 2:13 pm – A high layer was seen during the westbound leg back to the field, and three photos were taken (62 kft).

Descent:
- As we started the spiral descent over San Jose, the sky was clear with a high layer in the distance, and many clouds near the ground.
- No clouds were penetrated on final approach to the San Jose airport.

Flight Profile

- We climbed, reaching 53 kft just prior to waypoint 3.
- We reached waypoint 3 at 11:23 am, turned to the satellite course, and began a slow climb at 11:24 am.
- We reached 56 kft at about 11:40 am, and began a slow descent.
  We reached 53 kft at 11:48 am, and began a slow climb.
- We arrived at waypoint 4 at 11:58 am (55.5 kft).
- We began the descent to 40 kft at 12:00 noon. The spoilers were deployed at 12:02 pm in the descent.
- Waypoint 5 was crossed at 12:08 pm (44 kft) during the descent.
- The descent to 40 kft was completed at 12:11 pm.
- 12:13 pm – The climb to 53 kft was initiated.
- 12:15 pm – Crossed waypoint 6 at an altitude of 43 kft in the climb.
- 12:24 pm – We reached 53 kft about 127 miles from waypoint 7, where the climb was changed to a slow climb.
- 12:31 pm – We reached 56 kft and decided to continue the slow climb to 57 kft because the high layer looked to be above our altitude.
- 12:33 pm – We leveled off at 55.6 kft to generate a contrail, about 10 minutes from waypoint 7.
- 12:43 pm – We initiated the three-sided box turn back north, about 10 miles from waypoint 7.
- 12:46 pm – Our contrail was visible, but not very distinct. We attempted to fly back through it. The contrail was dissipating very rapidly.
- 12:53 pm – Initiated climb to maximum altitude. Reached 60 kft at 1:13 pm.
- 2:03 pm – Reached waypoint 8, and turned toward waypoint 9 at an altitude of 62 kft.
- 2:38 pm – Reached waypoint 9 and zoomed to 64 kft. The left engine flamed out at 64 kft. Initiated the spiral descent. The engine was restarted at 35 kft. We stopped the spiral at 22 kft per ATC.

Instrument Notes

- WAS 1 was turned on at 10:52 am (30 kft).
- The MMS pitch maneuver was not performed.
- The MMS yaw maneuver was initiated at 12:34 pm, and completed at 12:35 pm.
- WAS 2 was turned on at 12:00 noon. The WAS 2 fail light came on at 12:40 pm, and WAS 2 was turned off.
- WAS 2 and S-HIS were turned on at 2:38 pm at the beginning of the spiral descent over the field.
- The ozone fail light did not clear on initial activation. It was reset and cleared at 10:55 am. The ozone fail light illuminated several more times as follows:
  - 11:45 am – reset and cleared
  - 1:52 pm – reset and cleared
  - 2:07 pm – reset and cleared
  - 2:15 pm – reset and cleared
  - 2:50 pm – reset and cleared